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THE THEORIES OF SEX PRODUCTION.

BY A. VON MANSFELDE, M.D.,
Of Ashland, Nebraska.

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The theories of sex production begin with the Hippocratic Theory, which consisted in the belief that the right testicle furnished the seed for males and the left that for females. This theory, yet a common notion with many, even medical minds, received its refutation by Regner de Graaf. His experiments consisted in the extirpation of one or the other of the testicles, or the ligation of one or the other ovary, or rather ovarian ducts, of rabbits, and invariably would the offspring consist of both sexes. Dr. Thomas P. Tuckey, of Castletownroche, writing about the position of the placenta in male and female births (it being situated on the right side of the fundus in the male and on the left side in the females), says: It seems such an easy solution of the matter, that the right ovary should be intended for the production of male and the left for that of the female children, it leads me to such a train of speculations on the proposition that a woman has only sons because of atrophy or other diseases of the left ovary, or *vice versa*, two hundred and fifty years after the conclusive proof of Regner de Graaf to the contrary. (*Half-yearly Comp. of Med. Science.* Part 22, page 151.)

In regard to the notions indicated by Joubert's question, of the influence of the moon; or the notion of the position of the female during copulation, I say nothing, since they do not deserve refutation at this day.

It was my intention to note at length the many speculations in this direction, but the fruitlessness of the effort causes me to abstain. I will, therefore, only enumerate the more prominent theories. First, the so-called Hofacker-Sadler law of sex production. It consists in this declaration, that in marriages in which the husband is the senior by six years and upward male offspring decidedly preponderate. Statistics, of which there are very many and easily accessible, certainly sustain this assertion; yet it cannot be the law of sex production, since very striking exceptions oppose its universality.

Next in importance is the theory of M. Thury, Professor at Geneva, who taught thus: "The sex depends upon the degree of maturity of the egg at the moment of fecundation; that which has not reached a certain degree of maturity producing the female, and if fecundated when this point of maturity has passed, a male. It is certainly true, that observance of time in regard to the act of fecundation plays a prominent role in sex production, and numberless instances on record sustain it. (See Medical and Surgical Reporter, January to June, 1868.) Yet the precise period at which the ovum escapes from the ovary, especially in human females, is very uncertain; the conditions that determine the time of contact of the spermatozoa and the ovum are therefore exceedingly variable, and of course, for practical purposes, grant this being the law, would be valueless. I shall show, however, that M. Thury mistook one of the mechanical factors for the law itself, and this factor being one of the main causes of sex production, we have an explana-

tion furnished why his theory should have met with so many concurring instances.

But human ingenuity is untiring, as witness the next theory, which I quote from the Boston *Medical and Surgical Journal*, for September 26, 1878. It is the antipode to the theory of M. Thury. Dr. J. B. Swift, the writer, says: While studying the reproductive organs in the microscopical laboratory of Dr. Carl Heitzmann, of New York, last winter, Dr. Heitzmann advanced the following theory in regard to the determination of the sexes (let me say that this is the same theory modestly advanced by the learned author of Flint's *Physiology*, in vol. v, on *Generation*, page 346, and I will leave it to future inquiries, who of these two gentlemen take precedence. I am thankful to both, for they furnish me in this article good proof for my position, though otherwise intended). We know that it requires only a few spermatozoa, perhaps a single spermatozoon (see MEDICAL AND SURGICAL REPORTER, April 19th, 1879, page 349), to impregnate an ovum. If an ovum becomes impregnated by a few spermatozoa, the female element will be in excess and the result will be a female. If, on the other hand, a good many spermatozoa impregnate the ovum, the male element will preponderate, and a male will result. Now, if an ovum is high up, that is in the ovary or at the fimbriated extremity of the fallopian tube, probably only a few spermatozoa will come in contact with it. But if the ovum is low down, then many spermatozoa come in contact with it. If menstruation and ovulation are dependent one on the other, as many authorities affirm, then the situation of the ovum may be determined by the menstrual period; during the interval between the periods the ovum is in the ovary; just before the flow begins the ovum may be on the surface of the ovary or in the fimbriated extremity of the fallopian tube. As menstruation goes on the ovum descends, and the flow may entirely cease before the ovum is discharged. Then it is low down in the fallopian tube or even in the uterus itself. Now, if coition takes place during the interval between two periods, or just before menstruation begins, the ovum being up high, only a few spermatozoa pass up the fallopian tube and reach it; but if coition is just after menstruation, then the ovum is within the reach of many spermatozoa. Stock breeders understand this. If they want a female, they put the two sexes together at the beginning of the rutting period, but if they want a male, they wait until the female has been in heat some time.

Both Doctors Heitzmann and Flint, and Prof. Thury, recognize the time of the union of the factors concerned in propagation as being a cause of sex production; but while the former recognizes the influence of time upon the spermatozoa only, the latter allows himself to be governed alone by the influence of time upon the non-fecundated eggs. Dr. Swift then continues, at length, to furnish twenty cases to sustain this theory; they consist of two kinds: first, those cases in which connection had taken place shortly after menstruation, and which were followed by male offspring; and secondly, cases in which connection occurred midway, or nearly so, between the recurrence of menstruation, with the result of female offspring. The Doctor mentions about ten cases of the former, and I will strengthen his position by a few thousand more. I draw your attention again, gentlemen, to the Jewish law, which does not permit the male to make use of his prerogatives until the expiration of a certain time after menstruation; and this fact alone effects the percentage of the births of sexes thusly: while the common average of all births of all nations is as 104.5 males to 100 females, among the Jews of Prussia and other eastern nations it is 114–120 males to 100 females, and this average would be still greater, did fecundation invariably result from the first connection. We will presently explain this apparent incongruity. In the first place, the Doctor's theory contains an "If," backed, as he says, by many authorities, and yet incorrect when subjected to such writings as those of A. Reeves Jackson; for it must be admitted as a fact, undeniable, that ovulation in the human female may take place, and does so, first, when the female does not menstruate at all, as prior to the establishment of the menses, during pregnancy and the period of lactation; and, secondly, at any time during the intermenstrual period; coition and its accompanying genetic excitement and organic congestion being the prime motor power. In the second place does this theory run counter to all our experience in comparative embryology. Take for an example the bee; Dzierson observes that the unimpregnated eggs of the bees produce drones (males), and that the workers (imperfect females), although incapable of impregnation, sometimes lay eggs that produce drones. Eggs producing females are, however, laid by the queen, and these only *after impregnation*. That the male element of fertilization in the case of the bees would seem, therefore, to be essential to the production of females only. "Miles, 332."

The next theory which deserves attention is that of Mr. Gentry, a corroboration of Mrs.

Mary Treat's observations, and supplemented by the work of Mr. Thomas Meehan on plants; it is this: The higher grades of nutrition or vitality produce the female, and the lower grades the male sex. It may be stated, in regard to this last theory, that as a factor in sex production it must have quite a prominent position, but is not the law of sex production; only one of the means of sex differentiation? Finally, I ask you, gentlemen, to indulge me for a few moments if I intrude with my own thoughts upon the subject. I justify my demands upon your time and patience by the fact that I have consumed years of study in this particular direction, thus preventing the possibility of springing illy matured fancies upon you, and that I believe myself capable of presenting the subject in such a shape that it will prove more satisfactory than the theories just enumerated.

My Own Theory.—Sex is the result of the quantity of spermatic fluid taken up by the ovum during the act of fecundation, the minimum amount necessary to accomplish fecundation always producing males, and the maximum amount always producing females. The variation between the maximal and minimal points producing offspring of one sex or the other, in the ratio in which the male element is appropriated, or one or the other of the following conditions supervenes:—

1. The time when the two elements meet; males preponderating as the time from the rupture of the graafian follicle to the accomplishment of fecundation is lengthened.

2. The vigor of the ovum; which vigor is dependent upon (*a*) the time expired since the detachment of the egg from the discus proligerous of the graafian follicle, and (*b*) the health, *per se*, of the female in whose economy the egg is matured. Females being in excess in the ratio of the greatest vigor of the ovum.

3. The vigor of the spermatozoa. This again depends upon (*a*) the time elapsed since their change of domicile, and (*b*) upon the health, *per se*, of the male who furnished them. The greater the vigor of the spermatozoa the greater the probability of female offspring.

The facts in the case then seem to be, that the sooner the elements meet and the greater the vigor (the nutrition of the female being above par), the greater the probability of female offspring; and *vice versa*, the later the union of the generative factors takes place, and the weaker the elements concerned in the fecundation (the nutrition of the female being below par), the greater the probability of male offspring.

I have placed the factor of time in the foreground, since it has, in the theory of Professors Thury and Flint, demanded most attention; as already stated, time has a decided influence in sex production. While Prof. Thury allows the influence of time to act upon the perfection of the egg, this again determining the sex, Prof. Flint and Dr. Heitzmann, by the same influence, time, afford the spermatozoa an earlier or later access to the egg. In company with these gentlemen, I make use of the same factor, but from an opposite principle. In the first place, the egg, just after breaking its ovarian envelop, is at the acme of its vigor, and the time passing from this moment counts its course of decline, which is only ended by death or intervening fecundation; this, you will admit, is a sound deduction from scientific embryology, and does not give the least sustenance to the theory of Prof. Thury. The second position, that of Prof. Flint or Dr. Heitzmann, presupposes, as a scientific fact, that the spermatozoa alone have the capacity to enter the ovum, and that their accumulated presence produces the male offspring. To this latter assertion, as already stated, the fact opposes itself, that in the lower forms of animal life males may be developed from the unfecundated egg, while female offspring invariably demand the presence of the male factor; the former proposition, in regard to the "ego sum" of the spermatozoa, falls prostrate, when we remember the passive condition in the fecundation act of many animals, thus opening the door, by necessity, to other causes, and these we eagerly admit, in the shape of the self dependent ovum. The egg will take up any quantity of spermatic fluid, limited only by the size and vigor of the partaker; now, whatever tends to favor the latter conditions will, of course, increase the quantity of the spermatic fluid taken up. This self-evident physiological proposition, we hope, does not need any proof, but on the other hand, the question becomes legitimate, what influence, if any, has the male factor upon sex production under these conditions? The answer may be found in the description of the first changes of the fecundated egg, as given by Waldeger and others, to the effect that three to four days after fecundation (in the fowl), upon the sexual part of the Wolfian bodies a medium eminence is noticed, covered by epithelial cells, which eminence goes on developing until the eighth or ninth day, when, in the embryo destined to be a male a retrogression takes place, and in the embryo developing into a female progression continues, until finally the ovaries, with their eggs, denote the sex of the offspring. This epithelial deposit, surrounded on all

sides by flattened cells, indicative of the future peritoneum, is not evolved from the tissues of the embryo, but is a part of the original chaos of segmented cells forming the germinal membranes. This being an established fact, you demand an explanation of the changes which this deposit undergoes in the first days of its existence, in one instance progressive, in another retrogressive. It is only necessary to draw your attention to a physiological axiom, which teaches that stimulation, assisted by nutritive conditions of a progressive capacity, will always be followed by growth, be this of a normal or abnormal character. Stimulation, in this instance, is furnished by the quantity of the embryonic deposit upon the Wolfian bodies, which deposit consists of segment cells of the original fecundated egg, left over, so to speak, in the shape of yeast, to quicken the leaven of a future generation; the growing embryo having appropriated the necessary quantity of this material for the formation of its asexual body. Now conceive this ovarian deposit, this yeast, to be abundantly present, and admit the superior vitality of the forming embryo, a necessary precedent to the presence of the deposit, and you will have the sequence, increased nutritive process, always, as already stated, followed by greater growth. Do facts sustain this position? The first children of a marriage consist of a greater number of females, in the proportion of 100 females to 53 males (Burdach). The proportion of females in illegitimate births is greater than in legitimate. Causes tending to increase the birth-rate tend also to increase the proportion of female offspring (Dr. H. B. Baker, of Michigan). If the larvæ of butterflies are abundantly supplied with food before going into the chrysalis state, the perfect insects are females. Mrs. Mary Treat (*Popular Science Monthly*, June, 1873).

Sex in plants is the result of the grade of nutrition, the highest grades producing the female sex (Mr. Thomas Meehan). The queen bee is invariably developed by the assistance of a superior quality and quantity of food. Thus, irresistible facts seem to prove the necessity of the most perfect combination of circumstances, all in the direction of superior qualities, for the production of female offspring, and since these conditions cannot be said to exist in the majority of cases, the legitimate conclusion is drawn that male births preponderate, and secondly, that males have not the vitality which the females enjoy by reason of their superior developmental advantages. Is this true? Of the total number of still births there are three males to every two females. Death takes place in the ratio of four males to three females in the first two months, and in the next three months as five males to four females (Carpenter's *Physiology*).

It is well for physicians to consider the sex of their patient in making their prognosis, since my experience permits me to make it more favorable for females than for male children, under like circumstances. In regard to the preponderance of male births, I need only draw your attention to the registration of births and to the statistics given by Ch. Darwin in regard to the domestic and other animals; both will abundantly prove the facts in the case; and finding a very fair equality in the numbers of both sexes at maturity, we have furnished another proof of the lesser vitality of the male.

There is still one task for me to perform, namely, to furnish an explanation of the conflicting statements, all given in sustenance of the most varying theories, and all of them bearing the impress of truth. The great objection to all of them is this, that instead of applying the test to the law itself, the experimenters invariably confounded the factors concerned in the process of sex production with the law, and drew their conclusions from these faulty premises. Their conclusions were always of the *post hoc ergo propter hoc* species. Prof. Thury finds that in crossing the sexes at the commencement of heat, more female births are the results, and he quickly concludes that this is caused by the influence of his law of sex production. "The less mature the egg when fecundation ensues, the more certain a female offspring." But I interpose the physiological fact that the egg is more vigorous the moment it is liberated from the graafian follicle. Dr. Flint argues that the later the male factor enters the female economy the sooner will it come in contact with the approaching egg, and the offspring will be a male, by reason of a numerically greater number of spermatozoa entering the egg, in consequence of their accumulated presence. I suggest here, for consideration, the facts that spermatozoa abound most plentifully in very small quantities of seminal fluids for this reason, together with the fact that the quantity of spermatozoa being the same, to all intents and purposes, the difference of their presence in the ovum, numerically considered, must be sought for in the condition of the ovum, which, in the light of our present knowledge, must be admitted to have its share in the fecundating process. In addition to this I must again call your attention (even at the risk of repeating) to the fact of the necessary presence of the male factor for the

evolution of female offspring in the propagation of the bee family. Does science record anything to justify the supposition of a reversion of this law of sex production in favor of the mammal? The cases of Dr. J. B. Swift most plainly prove that when the ovum, in its fullness of life, conjugates with the spermatic fluid, its product is generally a female; all his cases occurring at an intercatamenial period, because impregnated by the spermatic fluid coming in contact with the ovum, liberated during or after coition—most likely discharged in consequence of the stimulus furnished by the sexual excitement. In corroboration of this I will state that of all the cases of extra-uterine pregnancies which I had the facility of examining, the fœtus was invariably of the female sex. I stated above that the greater number of male births among Jewish women would be swelled, if conception did not often take place, just as happened in the cases of Dr. Swift, from the succeeding ovulation, and not the preceding one, which would have furnished the male instead of the female progeny. All the cases on record then, for whatever purpose they may have been originally intended, furnish proof of the influence of time in the union of the factors of fecundation (not in the union of the sexes, however), for the purpose of sexual differentiation. Everything favoring an early conjugation of the sexual elements still at the zenith of their bodily vigor favors the development of the female, by reason of the surplus amount of free cells, constituents of the primordial eggs. Thus the female becomes the depository of the germs of a future generation of men and women who will be capable to appreciate the great influence a perfect and noble mother has upon the destinies of her offspring; those will be the men and women who will find their greatest glory in shaping into perfect harmony the greatest of all creations, the woman, who, in the delicate ovum, carries the inheritance to us of a mighty past and also the possibilities of a grander future.

THE HYPODERMIC USE OF MORPHIA.

BY D. M. BARR, M.D.

Read before the Northern Medical Society of Phila.

The hypodermic use of morphia was first introduced to public notice by Mr. Hunter, of England, in the year 1859, as a remedy for delirium tremens. The use of the instrument rapidly became general, until, at present, a practitioner is certainly not fully armed without it.

It may, therefore, seem like presumption in any one, at this late day, to read a paper before a medical society upon a subject so common to the profession. I would not have introduced the subject to-night, but for the fact that I have lately suffered, as all may suffer, through a widespread ignorance on the part of the general public, as well as some druggists, regarding the nature and results of this remedy. Many druggists are free to express opinions upon the medical care of their patrons; therefore it is the duty of the profession to give them correct notions, especially of new methods and remedies.

In 1865 a certain druggist put up for me a two-grain quinine suppository for a babe one year old. The druggist thought it was too much, and told the family that the doctor must have made a mistake. The babe had diphtheria, and upon this day was unable to swallow; the next day it died. The family would have no more babes *poisoned* by me, and changed their doctor. I remonstrated with the druggist, when he told me he "knew how to conduct his business." This same druggist prepared medicines for a patient of mine, during August and September of this year, contrary to my wish, but not interdiction, as they were old patients of mine, and I supposed could not be influenced.

The condition was an inflammation of the ovaries with parametritis. The ovaries could be plainly felt, right and left, and the pelvic tissues were hard as a board. Between the pains of inflammation and neuralgia, involving the lumbo-abdominal and sciatic nerves, I never saw greater suffering. There was frequent vomiting, so that no relief could be afforded by the mouth. I used hypodermics of morphia, half-grain doses, night and morning, with happy effect, arresting vomiting, restoring appetite, and temporarily controlling pain.

But with the increase of local congestion pressure upon the nerves increased, and a dose of three-quarters of a grain at bedtime was required on several occasions; even these failed to protect the patient perfectly from one dose to the next.

She lay, half asleep, half awake, tortured with returning pain; half understood conversation, seemed as in the walking stage of typhoid, with a disposition to get out of bed and a wandering imagination, so common in all delirium associated with uterine trouble. There was also occasional vomiting as the effects of the medicine wore off. Yet with all this there was a cool skin, normal temperature, regular pulse (at 80), and generally favorable condition.

The husband and friends became very anxious, uneasy and discontented. "Nobody had ever

heard of so many injections." The mother-in-law was sure I was killing her with these injections. The husband wanted to know, again and again, whether these injections would not leave her an imbecile; would they not weaken the system? were they curative? and other anxious queries; "everybody thought the dose too large; nobody ever knew of such use."

In vain I assured him this pain could not last long; that suppuration or resolution must soon take place, removing the cause of the neuralgia, and thus arresting the pain. In vain I pointed out the next period for menstruation as the probable outside limit of the severe pain, which had been set up just previous to her last period. (The show had been arrested by cold from exposure, originating the trouble.) In vain I assured him of the certain safety of his wife, both mental and physical.

Had I given her three hypodermics daily, as I often do, these troubles might have been quieted without vomiting, but unfortunately I ordered a chloral mixture, from which I find great comfort in these cases. Each dose consists of morphia sulph., gr.$\frac{1}{8}$; chloral hydrate, grs.xv; potass. bromide, grs.xx. To be repeated as required. The husband came home from the drug store assured that his wife would be injured by the medicines.

I cannot say whether or no by the advice of the druggist (but this I know, the druggist should have been able to assure him that it was a common dose of medicine), but under the impression that nobody used such doses, he wrote me: "Dear Doctor—My wife is too ill to have an opinion of her own, and it is my opinion that to have a change in my wife's condition I must have a change in doctors. Will you write me a note, saying Mrs. B. is no longer in your care."

In this case, had the druggist and friends understood the nature of this remedy, as I hope to show it, I should yet be in charge of one of my oldest and best loved families. This lady's affection for me and confidence in my professional skill was absolute. I had taken care of her sister in several similar attacks, though less violent, with the same medication, in the same doses. The husband, almost crazed with fear for his wife, did, as he supposed, his duty. It is, then, as a duty to the profession, that I lay before you to-night my experience with the hypodermic use of morphia.

In the year 1865 I made my first testings of hypodermic medication. I used it rarely, with great anxiety, and with morphia only. Until 1870 I never used more than one-quarter of a grain at a dose, generally one-eighth of a grain, or less; the teaching in general being that the strength was doubled by the hypodermic use. In this year (1870), assisted by my student, Dr. Pyle, then about to graduate, I had more than ordinary calls upon me for its use, and obtained such results as encouraged my confidence in the safety of the remedy. I became satisfied of the error of the then prevalent teaching as to its dangerous strength, began to take an especial interest in it, and to use it freely wherever severe pain presented with counter-indication for anodynes by the mouth. I have known convulsions to follow its use, but always had reason to believe that air had been injected with the medicine into the tissues. I never arrived in time to see the convulsions (though I could not doubt their occurrence), nor have I been able to note any after affect.

In the year 1870 I saw a colored man die shortly after the injection of half a grain, which at the time gave me great anxiety; but my subsequent experience convinced me it could not have been induced by the medicine. The case was one of renal calculus passing, Bright's disease being present.

The suffering was very great, and the first injection failed entirely to relieve; a second injection, given after two hours, scarcely made an impression upon the pain. About an hour afterward he suddenly become comatose, and died the next day. There was no post-mortem.

With these exceptions, I never saw an untoward effect of any character whatever, except the slight nausea, greater or less in proportion to the idiosyncrasy of the patient, not at all in proportion to the dose.

I was early taught to look upon opium and its preparations as our most efficient remedy in disease; to administer one grain of morphia without hesitation in the presence of otherwise uncontrollable pain; indeed, to control pain at all reasonable hazards; to look upon pain as nature's advance guard, useful only against surprise, its guns more dangerous to friend than foe unless at once, upon the onset of the attack, either called in or spiked.

My experience has led me to place dependence only upon half a grain of morphia as the ordinary adult dose in severe pain, to be repeated twice or thrice in twenty-four hours, if demanded. I have never repeated the dose more than three times daily, in any condition, and I have never given it to a child under fourteen years of age.

The usual effect of the half-grain dose is prompt and refreshing sleep within three to thirty

minutes, and lasting three to ten hours, and having a good appetite for two meals daily (noon and midnight), in all ordinary constitutional diseases.

The apparent delirium so common a result of partly subdued pain, so frightful to friends, I have never feared; have never seen result in any trouble; all the symptoms subsiding with the disease.

It is a question whether puncture should be made directly over the seat of pain or at a distance more convenient of application. My experience is this: in conditions of general rheumatism, peritonitis, delirium tremens, cancer, colic, etc., the system is equally influenced and pain subdued by selecting the seat of puncture. But in local neuralgia and rheumatism, in carbuncle, felon, etc., the local use is better.

Through it we have directed to the near vicinity of the diseased tissue a wound and a foreign substance. The increased vital action required to take up the medicament and heal the wound will at the same time act beneficially upon the local trouble and tend to heal the diseased tissues.

It has been asserted that morphia in rheumatism tends to increase heart affections. There exists a possibility that where the pain of rheumatism is early subdued, medicines to counteract the condition and tendencies to deposit may be too early discontinued, and the disease go on to injury; be this as it may, my record of cases with hypodermic treatment, always associated with other ordinary medicines, has fewer heart troubles than before such treatment.

In order to make this paper quite practical, I will detail some cases of hypodermic treatment.

Case 1.—Colored man, formerly my hostler; general rheumatism, pain over the entire body, unable to move, high fever. Ordered ordinary medicines, and gave hypodermic ½ gr. morphia. Sleep in three minutes, which continued all night, with profuse perspiration. Next morning repeated hypodermic, also on the following morning, when, all symptoms having vanished, I directed how medicines should be continued, and bade good bye. Result, perfect health.

Case 2.—Lady at Ocean Grove; general rheumatism. Found her sitting in bed, in which position she had already passed two days and nights, under homœopathic treatment. Ordered ordinary medicines and gave ½ grain morphia, hypodermically. Within three minutes she said "I feel easy." With assistance she was placed comfortably in bed, and was at once asleep. In the morning found her almost without pain, lying in bed as I had left her; repeated hypodermic; ordered medicines continued. Paid her no more visits. She has had no return of disease to this day.

Case 3.—Mr. F.; general rheumatism, subacute; had attended him before with same disease. This case was then very tedious, and on this occasion the condition resisted my treatment three weeks; pain almost continuous; patient declining hypodermics; at last consenting, they were used night and morning, with prompt relief of pain and steady progress toward recovery.

Case 4.—Lady, seen in 1874, in connection with Dr. C. A. Groff; general rheumatism, which soon settled in thigh and leg. The parts were enormously swollen, and I never heard such lamentations over pain. The stomach rejected all food and medicine. The case was tedious, lasting over four months. She assured me that medicine in her arm never did her any good *until it was put in her thigh*. She received half a grain of morphia morning and evening, controlling pain and restoring appetite. Gradually the dose was increased to one entire grain, and upon one occasion the patient continued to scream, and in an hour the dose of one grain had to be repeated, effecting sweet sleep for the woman all night and showers of blessings upon the Doctor next morning. During the last of the four months the hypodermics were limited to half a grain, once daily; since which time she has received none. Now reports herself never better in her life; no heart trouble, no head trouble; sound in mind and body.

Case 5.—Mr. C.; sciatica. At his request I treated him three months without hypodermics; no result. Then gave hypodermics, ½ to ¾ of a grain of morphia, night and morning, in connection with same medicine. Pain left at once, to recur shortly before the next hypodermic. At the end of four weeks it forgot to return. Hypodermics gradually discontinued during next three weeks. Result: perfect health; no relapse.

Case 6.—Mrs. N., wife of clergyman; sciatica, fourteen months' duration. Husband says she has tried old school and new school, Indian with herbs, old school again, heroic treatment, hot baths, sea shore, electricity; even Prof. Paine, who diagnosed "worms," system crowded with animalculæ, gnawing at her bones; proved it by showing them, by the microscope, in the mucus from the tongue. There they were, but there were just as many when he ceased treatment as when he begun. The pain was not abated until the magic of the hypodermic was called in, when, *presto*, the worms ceased to gnaw, pain slept,

strength came to the weakened muscles, and before the end of six weeks she ran a race with a company, to gain a car, at 12 o'clock P. M., and was the first to enter it. No relapse, now over a year. Treatment was ½ to 1 grain morphia, night and morning; withdrawn in gradually diminishing doses.

CASE 7.—Mr. S.; sciatica. Suffered for years; unable to raise leg, or walk without a limp. Tried every variety of medicine, the inevitable electricity also, with no relief. Two months' treatment with the hypodermic, ½ grain, increased to ¾ grain, night and morning, set him free. Two weeks ago he took cold upon exposure; now suffers slightly. I can cure him again with this little needle; I doubt any other power save the knife.

CASE 8.—Mrs. —; uterine neuralgia; seen in connection with Dr. Pyle, in 1870; had suffered for years. After coming under my treatment she received a hypodermic of morphia, ½ to 1 grain, once or twice daily, for six months. It was her custom to be in severe pain upon my arrival; to be asleep before I could replace the syringe in the case; to awake at 12 o'clock A. M. and P. M.; have her meals at that hour; again sleep until the return of pain, shortly before my arrival. This lady took about *three hundred* hypodermics; is now perfectly well; no return of trouble; no more hypodermics.

CASE 9.—Mrs. ——; puerperal fever; confined October 28th, 1876; chill on 1st of November. Treated with hard old opium pills, with other medicines, till the 17th of November, when she could retain nothing upon her stomach. Pulse 130, muttering delirium, intense pain, marked peritonitis. Gave hypodermic, half a grain of morphia, night and morning, which arrested the vomiting. For seven days she was fed with Wyeth's preparation of beef-wine and iron, nothing else. The pain increasing, I gave three hypodermics daily, of one grain each; nothing less would relieve the pain. Mother and nurse both refused to care for her under my directions; said I would not let her die in peace. Her husband alone stood firm. Symptoms continued dangerous until November 23d. She passed the crisis at 4 A.M. I was at her bedside; the pulse reduced rapidly and she asked for ice cream. Her change from puerperal insanity to clear reason was the work of a moment.

November 30th, gave hypodermic, half a grain of morphia, at bedtime. December 8th, no morphia.

In January, 1879, I delivered her of a fine little girl, without trouble.

CASE 10.—Mr. ——; abscess in the region of the kidney. Prof. Agnew saw him with me, in consultation, August 1870. He was in bed six weeks before operation. During this entire period I gave him a quarter to one grain of morphia, by hypodermic, night and morning, with large and frequent doses of morphia, chloral and bromide mixture, during the intervals. This gentleman took two meals daily (noon and midnight), with a good appetite. To-day he is in perfect health; sound in mind and body.

Another case, similar in kind, and seen by Prof. Agnew at the same time (and treated without hypodermics), died from exhaustion, as I believe this man would have done without them.

I might go on giving cases in which I have given large doses of morphia hypodermically. Cases of delirium tremens, epididymitis, hysteria, etc., but I hope, gentlemen, I have said enough to convince you, and through you both druggists and people, that the hypodermic use of morphia against severe pain is safe, even in large doses; prompt, accurate, leaving less of evil on mind or body than any other method of administration; controlling the vomiting, soothing the pain, and holding in abeyance dire disease; so that the feeble flame of life may live through the storm and wake again to beauty and health after its fury be spent. I wish to remind you, also, that with a good needle the pain is much less dreaded by the patient than the trouble of being raised and the nausea of being dosed.

HOSPITAL REPORTS.

JEFFERSON MEDICAL COLLEGE HOSPITAL.

CLINIC OF PROF. GROSS, OCTOBER 25TH, 1879.

REPORTED BY FRANK WOODBURY, M.D.

Fibroma of the Mammary Gland.

The first case presented was a young woman, of nineteen, who had been troubled for a number of years with a tumor in her left mammary gland, for which excision of the breast was performed at this clinic one week ago. The growth had been very slow and painless until within a few months, when her attention had been directed to it by a more rapid increase. There was no retraction of the nipple, the overlying skin was natural in appearance. At the time of operation the tumor was thought to be a cystic fibroma, but subsequent microscopic examination by Dr. W. G. MacConnell proved it to be a pure fibroma, with very few adenoid elements.

Antiseptic vs. Simple Treatment.

Dr. S. W. Gross, of the surgical staff of the Hospital (who had performed the operation in

the above case), called attention to the simple character of the dressing usually employed here. "After the wound had been brought together by interrupted sutures and strips of adhesive plaster, a simple oiled compress was applied over the wound, which united throughout by first intention. Simple dressings only are employed at this clinic, but strict cleanliness is required in the instruments and dressings that are to come in contact with the wound. No use is made of carbolic acid; the instruments are not kept, for instance, in antiseptic solution before the operation; no attempt is made to operate under carbolized spray, and yet the results obtained in the operations at this Hospital, by simple dressings and ordinary care, are as good as could possibly be obtained had Prof. Lister's process been adopted. Out of five amputations of the breast recently performed all recovered save one, who died from shock. In the five major amputations of the extremities, thus far during the session, including one amputation at the hip joint, all have done well. No better results can be shown by what is called the antiseptic method than we have obtained by simple treatment."

Sebaceous Tumor of the Lip.

J. D., aged 20, presented himself with a small growth on the inner surface of the lower lip, near the angle of the mouth. Seven or eight years before he noticed in this situation a tolerably hard nodule, about the size of a small shot, underneath the mucous membrane. It remained stationary until about twelve months ago, when it began to increase. It never gave any pain, but it is inconvenient, from its size. On application the tumor was about as large as a small hazel nut or marble; rather dense, but not tender on pressure.

Prof. Gross said: "Many years ago, in my work on 'Pathological Anatomy,' I described a variety of cystic tumor of the lower lip, produced by the obstruction of the outlet of one of the mucous crypts or follicles that are normally found in this situation, and which may be easily seen in the natural condition by everting the lip and examining its surface. They normally secrete mucus, and when obstructed, a retention cyst is formed; such cystic tumors may be found in the mucous membrane of the nasal passages and pharynx, as well as in the mouth; they may also occur elsewhere, as in the vagina and on the mucous surface of the labia. They are of slow growth, and painless.

"The tumor in the present case appears to have more solid contents than would be found in a myxoma, and I take it for granted that it contains a good deal of adenoid material. It is not a cystic tumor, in the true sense of the term. It finds its analogue in the skin, in the sebaceous tumor, or wen, formed by the retained secretion of the sebaceous glands existing in large numbers upon the nose, the forehead, cheeks, scalp, and other parts of the integumentary system, in all portions of the body.

"There is only one treatment to be pursued, removal by the knife. Proceeding to excise the growth, I have now turned it out of its cavity. The entire cyst must be dissected out, for a small portion allowed to remain would lead to a speedy reproduction of the tumor.

"The wound is closed with a single stitch, and the patient dismissed with special injunctions to live on soft diet for a week, and to avoid exposure to cold. Every source of irritation must be avoided, in order to guard against erysipelas."

Case of Stone in the Bladder—Lateral Lithotomy.

"The next case, a boy of 13 years, has been troubled with symptoms of stone in the bladder for a long time. The patient is dull and stupid, and does not give a very definite statement as to the duration of his complaint, but says that he has suffered from trouble of this kind since infancy. He has no father nor mother, and is alone in the world.

"He presents all the rational symptoms of stone, objective as well as subjective. I have sounded him and satisfied myself of the existence of stone in the bladder; it is a large one, but I have not ascertained its dimensions by measurement.

"His general health is good. He eats well and sleeps well; the bowels are regular; there is no constitutional involvement whatever. The disorder is purely local; were it not for this bladder trouble he would be in a state of health. He has to pass his water every few minutes during the day and several times during the night.

Frequency of micturition is one of the common symptoms of stone in the bladder, and may be due to a variety of causes, or a combination of them. There is likely to be some cystitis present, which is maintained by the constant irritation from the presence of the stone. When the calculus is very large it impinges upon the neck of the bladder and causes frequent desire to pass water, although only a small quantity is expelled at a time. The calculus also causes pain in micturition, and when it occurs at a very early age we find children, thus afflicted, constantly in the habit of pulling at the head of the penis and foreskin, in attempting to relieve the irritation of the neck of the bladder. In this manner an elongated prepuce is formed, which is one of the objective signs of stone. Then we have very often a urinous smell about the person, due to the contact of the urine with the patient's clothing; and we may often observe the patient walking about with his hands in his pocket, tightly grasping the head of the penis, with a view of affording relief. This pain extends from the seat of irritation, in the pernieum, along the urethra, and is felt at the end of the penis; it may also be carried down the thighs, or be felt in the lumbar region.

"The urine becomes very decidedly changed. It has a marked sediment of muco-pus and earthy salts. In advanced cases it may even contain renal casts, and occasionally albumen. The flow of the urine is sometimes interrupted by the stone falling against the neck of the bladder, causing severe pain, and obliging the patient to change his position and assume some unusual attitude, in order to pass his water. Even where these subjective symptoms are present, the true nature of the case can only be determined with precision with the aid of a nickel-plated steel instrument, called a 'sound,' which I have fre-

quently described to you; it is introduced like a bougie, but after entering the bladder it is turned in various directions in the effort to encounter the stone, which manifests itself by its resistance and by the audible "click" elicited on striking its surface. Very often the sound comes in contact with the stone in the bladder immediately upon entering its cavity. We are always anxious, not merely to find an obstruction, but particularly to elicit the click. If the search be unsuccessful the patient should be allowed to rest for twenty-four or thirty-six hours, before the examination is repeated. It very frequently happens that a stone exists but it cannot be found at the first examination, but on a subsequent occasion no difficulty will be experienced in demonstrating its presence. At all events the surgeon should be sure not to open the bladder until he has by this means positively ascertained the existence of a calculus.

"At the time of examination there should always be some urine in the bladder, from four to six ounces in an adult, from three to four in a child. If there is too much fluid a small stone may escape the sound, if too little, the movements are restricted, and the stone may be encapsuled or buried in the walls.

"The patient's general condition should always be inquired into; he should never be sounded when fatigued after a long journey. Nor should lithotomy be performed unless the system has been prepared by proper treatment. Quinine and anodynes will be found useful, but a nourishing, non-stimulating diet, with perfect rest for a few days, are essential. The bowels should be well evacuated by a dose of castor oil, on the night previous to lithotomy, and just prior to the operation the lower bowel must be emptied by a large warm-water injection.

"After the chloroform has been administered by Dr. Hearn, I propose to perform lithotomy by the lateral method, making the incision on the left of the raphé of the perineum, as is my custom. The external wound is made about midway between the verge of the anus and the scrotum, in the adult about 1½ inches in front of the anterior anal border. The knife is carried from this point obliquely backward and outward, in a line midway between the anus and the tuberosity of the ischium. In the present case the incision need not be more than an inch in length; if necessary, it can be subsequently enlarged.

"The wound need not be so large in a child as in an adult. I ordinarily make my incision very small at this time of life. The skin and superficial layer of fascia are divided at the first cut, with some of the external hemorrhoidal vessels; the next structure divided is the transverse perineal muscle, with its artery and nerve; finally, the deeper layer of the fascia is opened, and as the knife enters the bladder, the membranous and prostatic parts of the urethra are divided, with the left lobe of the prostate gland. The incision in the prostate, in a child, should be small, as the wound in this organ is easily dilated with the operator's finger; very different from the prostate of advanced life, where the gland becomes tough, dense and inelastic. The finger having followed the staff into the bladder, and encountered the stone, the stone forceps are to be introduced along the finger and an attempt made to grasp the concretion, with its long diameter parallel with the blades. The stone being firmly seized, is withdrawn with a gentle movement, in very much the same manner that the obstetrician delivers the head of the child with his forceps.

"Sometimes troublesome bleeding follows lithotomy. From the long continued irritation the small hemorrhoidal vessels in the neighborhood become distended and hypertrophied, and produce oozing, which, however, may be generally controlled by cold applications. The transverse perineal artery, as it runs by the side of the transverse muscle, must necessarily be divided, but the vessel is small and rarely produces trouble. A greater danger consists in wounding the artery of the bulb, a branch of the internal pudic, when the incisions are carried unduly high. The bleeding from this is much to be dreaded, as it is deep-seated, and on that account difficult to ligate. The bulb of the corpus spongiosum may, in like manner, be wounded, and, being very vascular, will give considerable trouble. When the incision is carried too far outward, it is said that we may wound the internal pudic artery, as it runs along under the border of the ischium, but I have never seen this accident.

"Prior to lithotomy, the perineum of an adult must be shaved, and during etherization it is well to have the penis secured, so that the urine does not escape before the operation.

"The patient being ready, he is brought down so that the breech projects over the end of the table, the staff is introduced, with its handle slightly inclined to the right, so as to make the left side of the perineum prominent; the thighs are moderately flexed on the pelvis; if flexed too strongly it makes the perineum too bulbous and tense. The bowels are thoroughly evacuated by the oil and enema, for two reasons, first, because if the rectum were distended with fæces it would be in danger of being wounded by the knife, and secondly, because I make it an invariable rule to lock up the bowels for five or six days after the operation, sometimes even for eight days, so that the bladder will not be disturbed by the contraction of the parts. As a preliminary step in the operation, it is customary to introduce the left forefinger into the rectum, with the view of making the sphincter contract and draw the gut away from the knife, but more especially with the object of ascertaining the position of the staff, which, as you know, is provided with a groove in its convex surface, along which the knife passes into the bladder. The wound should be made obliquely, and not carried straight down, as recommended by the books and practiced by most surgeons. As there was a very tight prepuce in this case, preliminary circumcision was required."

[The operation having been performed, a stone as large as a hazel nut was extracted. It had the appearance of an oxalic acid or mulberry calculus.—Rep.]

"The patient shall have a full dose of laudanum, as an anodyne, as soon as he comes out of the anæsthetic sleep. In the meantime he shall be carried to bed, and placed on a draw-sheet, under which is an oilcloth, to protect the mattress. The draw-sheet is necessary to receive

the discharges, and promotes cleanliness, because it may be frequently changed. The urine will escape, for about twenty-four hours, through this opening in the perineum; then the lips of the wound will be closed by swelling, and the water will pass through the natural channel for the succeeding twenty-four or thirty-six hours. By this time the swelling will have subsided, and the urine will escape by the wound until it finally closes by granulation, in the course of a week or so.

"This concretion is a mulberry calculus, the worst of all to produce pain, on account of these irregularities of its surface, from which its title is derived. It is hard, dark colored, and tuberculated; this variety is very uncommon in comparison with the uric acid calculus, which is the one generally met with. These concretions often have as a nucleus small renal calculi that have been formed in the pelvis of the kidney and passed down the ureter, upon which successive layers of deposits may take place. Stones may, however, originate in the bladder, from the urinary salts, or from shreds of fibrin, or other substance acting as a foreign body."

Lithotomy by the Lateral Operation, by Dr. S. W. Gross.

Dr. S. W. Gross presented the next patient, also a case of stone in the bladder, who had been kindly sent by Dr. Cruice, of Chester.

The patient, a man of 62, has had symptoms of vesical trouble for a number of years. An examination was made one week ago, and a stone was detected immediately on entering the viscus. Upon introducing the finger into the rectum, the stone was found resting upon the *bas fond* of the bladder.

The urine was alkaline, not albuminous, but contained phosphates and urates, in abundance, with clouds of mucus; it was passed frequently, with the usual pain and strangury.

"The most marked point of difference between this case and the preceding is in the state of the prostate gland. In old persons the prostate is apt to become enlarged and increased in density, especially so when the constant irritation of a stone is present; in this case it appears to be less hard than usual. Referring to the anatomy of the part (as illustrated by a diagram on the board), we recall the fact that the posterior layer of the deep perineal fascia (a part of the triangular ligament), embraces the prostate gland so as to make it a pubo-prostatic ligament. This is important to be borne in mind, for in making the incision in the prostate gland it must not be carried too far posteriorly, because if this posterior layer of the deep perineal fascia be divided, there is a prospect of infiltration of the urine into the pelvic fascia and loose tissue between the bladder and rectum, leading to diffuse cellulitis, and probably death from peritonitis. In the child the prostate is very distensible, and we must limit the incision to half an inch, depending upon dilatation and laceration with the finger to accomplish the rest; in old men this cannot be readily done, and the further use of the bistoury is often unavoidable. The incisions, however, should be kept in front of the base of the gland. There is another danger to which our patient is exposed in enlarging the incision. Around the neck of the bladder we find situated the vesico-prostatic plexus of veins, which, being enlarged by the constant irritation, become the greatest ordinary source of hemorrhage after lithotomy in old subjects, as the vessels are dilated and varicose, and have no valves. They are, moreover, liable to absorb from the wound and to carry into the blood the products of inflammation, and cause septicæmia, or lead to fatal peritonitis. We are also likely to have more bleeding, in old persons, from the external hemorrhoidal vessels, than in a child. These constitute the principal points of difference that exist between this and the preceding case, if we except the relative greater size of the parts and the deeper perineum.

"In considering the sources of hemorrhage, it should not be forgotten that the artery of the bulb may take an abnormal origin from the internal pudic, even as far back as the ischial tuberosity. In this case it would of necessity be divided in the operation and require ligation. In old persons the bulb of the corpus spongiosum is more relaxed, and care is required to avoid it, as it is sometimes not more than half an inch in front of the anus. By inserting a finger into the bowel it can be drawn backward, away from the bulb. This allows the free division of the membranous and prostatic portion of the urethra, with about half an inch of the left lobe of the prostate gland; we then dilate the wound by introducing the finger into the bladder before withdrawing the staff.

"The danger of lithotomy increases with the age of the patient. In old subjects between four and five out of ten die, while in children we expect all to recover. Professor Gross concurs in this opinion, and says that he has cut seventy-two children with only one death.

"The method of operation is identical with the preceding case, except that the incision will be a little longer, beginning at a point one inch and a quarter in front of the anus. The deep incision shall not be so large, the wound decreasing in size as it descends. Where enlarged prostate complicates stone in the bladder the prognosis after operation is unfavorable. The last four cases of this kind operated upon at this clinic all died."

[The patient being influenced by ether, the lateral operation was performed, and a large uric acid calculus, weighing — grains, was removed. No bleeding followed. The bladder was carefully syringed out with warm water, to remove any debris or fragments of stone, and the directions for after treatment were given, as in the first case.—Rep.]

Stricture of Urethra, with Cystitis.

H. S., forty-seven years of age, had gonorrhœa twenty years before, and suffered from stricture for five years. One year ago his stricture was divided at this clinic, but it has again returned. He now has frequent micturition and severe pain, showing that he has also cystitis. The patient weighs upward of two hundred pounds, and, were it not for this trouble, he would be a stout, healthy man.

Prof. Gross brought the patient before the class for the purpose of performing perineal sec-

tion. He said that he had no doubt that by performing internal urethrotomy he could reach the bladder, but his object in making the external incision was to provide free drainage for the bladder, and thus relieve the cystitis. The urine will not then be retained in the bladder, but allowed to drain away as fast as secreted.

"There are no sinuses in the perineum in this case, as there usually are in old, tight strictures, and in view of this, we conclude that the urine is not escaping into the connective tissue.

"External urethrotomy is not infrequently performed in cases of bad stricture. It consists in introducing an instrument into the urethra as far as possible, and cutting down upon it in the perineum, where it serves as a guide for the knife. The incision is carried along the instrument, through the membranous portion of the urethra and the neck of the bladder.

"In such cases there is always an amount of mucus and pus in the urine, giving a thick, viscid deposit. The term cystorrhœa is sometimes used to designate this condition. Now and then renal casts and albuminuria appear, although rarely. The amount of urine is sometimes remarkably great; in other cases there is less water, and the sediment is so adhesive and tenacious, that a vessel containing it may be inverted without spilling its contents.

"The operation proposed will afford the patient much relief, as it will divide the neck of the bladder, and will not only prevent any accumulation of urine, but will permit the use of sedative and detergent injections.

"Stricture is almost always the result of gonorrhœa, neglected or badly treated. As a result of the mucous inflammation fibrin is poured out, and becoming organized is converted into a fibrous tissue surrounding the urethra, which acts mechanically by preventing the dilatation of the tube and by showing a decided tendency to contraction. This is shown more particularly in the membranous portion of the urethra, which is naturally the narrowest portion of the tube, and is located between the superficial and deep layers of the deep perineal fascia. Strictures do not occur further back than this; although the prostatic portion often—perhaps in the great number of cases—is inflamed, there is no submucous deposit of fibrin, and it does not give rise to stricture; at least this is my experience, and that of other surgeons.

"I find a very tight stricture here. I have now succeeded in passing this first obstruction, and find an impassable constriction behind it. On a number of occasions I have succeeded in performing this operation without having an instrument in the bladder, but our patient is not the best subject in the world, and I will desist for the present. I have frequently noticed that fat people are not good subjects for operation.

"This patient shall wait until the next clinic day, and in the meantime an effort will be made to get a small instrument into the bladder. He has been taking quinine for some time, to prepare him for the operation, and on going to the ward he shall have fifty drops of laudanum, and be kept perfectly quiet for the rest of the day."

Medical Societies.

PROCEEDINGS OF THE STATE MEDICAL SOCIETY OF VIRGINIA.

REPORTED FOR THE MED. AND SURG. REPORTER.

This Society held its tenth annual session in the city of Alexandria, October 21st, 1879, with a respectable attendance of Fellows and several eminent physicians from the adjacent cities of Washington, Baltimore and New York.

Of the two thousand physicians in the State, three hundred and eighty-seven are members of the Society, eight of whom have died during the past year. In the course of the address of welcome, Dr. Powell, of Alexandria, said, "There never was a time in the history of medicine when the means, processes and appliances for obtaining facts were as varied and numerous as now, and never before did experimental researches in pathology and physiology yield such fruitful results to well-directed labors."

The annual address to the public and profession was by Dr. Oscar Wiley, of Salem, Roanoke, who discussed in an eloquent manner the theme of "the Reflex Influence of Lives Devoted to the Healing Art." He was followed by the President, Dr. L. S. Joynes, of Richmond, who entered at length into the laws of the State which bear upon the medical profession adversely, and pointed out how an amendment of them could be secured. He adduced a number of examples of country physicians, Jenner and others, who had rendered distinguished services to humanity and the profession. He deprecated factious differences between physicians, as differences of opinion in medicine, as in all other matters, must ever occur. He urged the members to work together for the alleviation of human misery and the good of mankind.

An interesting paper upon Hygiene and Public Health was read by Dr. S. K. Jackson, of Norfolk, in which he strongly urged continued investigations into the perturbing cause of yellow fever, believing that final success will crown the efforts of the investigators.

A committee of five were appointed to report on a plan for the organization of a medical or Mutual Aid Society in this State, and when advisable, to submit the same to the consideration of, and urge its adoption by, the American Medical Association. Dr. Frederick Horner, Jr., addressed the Society on the feasibility and advisability of such an organization, to embrace all physicians who are Fellows of the State Medical Society, with the view of furnishing relief to the disabled and assistance to the families of those who die. He cited various examples of such societies in other States and other professions.

The resolution on this subject was unanimously adopted, with instructions to the committee to consider it especially in reference to its relation to the profession in Virginia.

Dr. W. C. Dabney, of Charlottesville, read a paper on Sutural Reunion of Divided Nerves.

Four committees, each to consist of three members, were appointed to report on the mine-

ral waters of Virginia; one on the thermal waters; one on the sulphur; one on the lithia and magnesia; and one on the alum and chalybeate, to embrace all the medical qualities of the waters and their uses in sickness.

It was agreed that hereafter the President be elected by the vote of the whole Society, and not upon a recommendation of a nominating committee. The resolution was endorsed by a decided majority.

On reassembling, the second day of the proceedings, Professor Hunter McGuire read a very interesting report of two cases of Battey's operation successfully performed by himself.

Dr. J. Marion Sims complimented Dr. McGuire for the interesting accounts just read, and was warm in his praise of Battey's operation.

Dr. McGuire thought that, except to save life or prevent insanity, the operation should not be performed.

Dr. Sims coincided with Dr. McGuire in the danger attending the operation.

Dr. H. P. C. Wilson, of Baltimore, was profuse in his praise of Battey's operation.

Dr. Wilson read a paper on his thermantidote, an instrument to prevent burning the soft parts in the operation with Pacquelin's cautery, and exemplified its use by experiments.

A vote of thanks was tendered Dr. Wilson for his useful discourse and interesting experiments, and his paper was ordered to be published in the Transactions.

Dr. Sims praised the invention of Dr. Wilson, and in this connection gave some very interestings facts in reference to neuralgic affections, and their cure by cauterization, with the modesty of true merit and the eloquence which distinguishes his utterances on occasions of the kind. Dr. Sims referred to his successful treatment of abscess of the liver, marked, according to the experience and observation of Hammond, Brown-Séquard, and others, by obscure symptoms of cerebral congestion, and even of insanity, and by no means readily detected. In the person of the eminent medical journalist, Dr. Gaillard, of Louisville, for several years past a hopeless invalid, was lately exhibited an example of this uncommon disease. Himself and Dr. Hammond operated on Dr. Gaillard, with success, and to the great relief of the patient and his friends.

Dr. J. M. Toner, of Washington City, read an interesting sketch of the life of Dr. James Craik, Washington's physician and friend.

The Treasurer's report showed a balance in his hands, after paying all expenses, of $2.58. The collections have been $1178.

Dr. Kerfoot moved that the subject for discussion at the next annual meeting be "Tobacco, its Uses and Abuses in Health and Disease." Lost.

The subject agreed upon was the "Summer Complaint of Children."

On the afternoon of the third day, and after the election, as President of the Society for the ensuing year, of Dr. Henry Latham, of Lynchburg, and the selection of Danville as the next place of meeting, the Society adjourned *sine die*.

FRED. HORNER, JR., M.D.

The full Transactions will appear, as usual, in the *Virginia Medical Monthly* at an early date.

NORTHERN MEDICAL SOCIETY OF PHILADELPHIA.

Dr. D. M. Barr read a paper on

The Hypodermic Use of Morphia.

Given on page 423.

Dr. A. M. Slocum thought half a grain more than the customary dose. He usually gave one-eighth to one-fourth of a grain. His experience with the instrument was not great, but favorable. He never had any local inflammation follow its use.

Dr. L. B. Hall had not used the instrument, except in cases of severe pain. Considered half a grain of morph. sulph. an ordinary dose under such conditions. On one occasion he repeated the dose, giving one and one-fourth grains within an hour, with happy effect. Had seen a local abscess follow in two cases. He was then using Magendie's solution. Now carries half-grain powders, and washes needle in alcohol on return to office. Since taking these precautions has had no trouble. Once obtained an instantaneous effect, and suggested the direct introduction into a vessel as the possible cause.

Dr. N. Hatfield limits the use of the instrument to cases of severe pain, as after a severe injury. He prepares the solution at the time of using. Considered one-quarter of a grain the usual dose.

Dr. I. G. Heilman generally uses it in cases of severe pain, as cholera morbus, etc. Usually gives one-eighth to one-fourth of a grain.

Dr. E. R. Stone considered half a grain a large and unusual dose. In one case, however, he began with one-quarter of a grain and repeated the dose until he had introduced one and one-half grains within an hour. He then obtained relief, with no bad after effect. He makes the solution at the time of using. Never obtained any bad effect. In one case in which the patient had become accustomed to half a grain twice daily, he suddenly ceased giving it, and used an injection of water, with the same effect upon the patient, he supposing it to contain morphia as usual. He asked Dr. Barr if he had ever known the patient to acquire the opium habit through the use of the hypodermic.

Dr. Barr knows of no one who uses the syringe at home. The fact that so many of the profession consider half a grain an unusually large dose is what lost him his patient, through the aid of the druggist, and is his reason for reading the present paper. In answer to Dr. Hall, he believed the sudden effect to be due to direct introduction into a vein. The bad result he thought proceeded from the introduction of air into the tissues. He had carried an instrument until it had become so rusty that it was impossible to use it, yet without bad effect. He liked the idea of cleansing the needle with alcohol.

—The British Army and Naval service, like our own, is suffering from a scarcity of medical applicants. Let the governments make the inducements greater, and this scarcity will disappear.

EDITORIAL DEPARTMENT.

PERISCOPE.

Rest, Pressure and Dry Dressing in Wounds.

In a lecture on this subject, in the *Lancet*, Mr. Samson Gamgee, F.R.S.E., gives this case, and remarks—

I was consulted a short time since in the case of a middle-aged gentleman, of full habit, but without gouty history. Two months previously, while cutting the big toe nail of the right foot, he injured the end of the toe. It swelled and became painful. He had the advantage of attendance by two very able practitioners, who applied a variety of lotions, fomentations, and poultices, partially excised the nail, and had, in fact, as I was assured, done almost everything. The patient, in robust health, was confined to his bed, wholly disabled by the exquisitely painful toe. When I visited him in consultation I found a bread poultice secured on the end of the toe by means of a handkerchief crossed over the ankle. So timid was the patient that it was only after some little persuasion that he would allow me to remove the poultice. This done, and all its particles gently wiped off with a piece of dry, soft lint, I exposed a big, tense, shiny-red toe, exquisitely tender to the slightest touch. In the place of the nail was a dirty, reddish-gray sore. This I covered with a thin layer of muslin soaked in a solution of borax and glycerine. I enveloped the foot and ankle in a layer of fine cotton wool, applied a piece of moistened pasteboard to the sole of the foot, extending from a little beyond the heel to half an inch in front of the great toe, broad enough to embrace the tread of the foot. Across the ankle I placed two diagonal strips of moistened pasteboard, and fixed the whole with a smoothly but steadily compressing bandage. The dressing was completed by fixing, with a few turns of bandage, a dry pasteboard splint to the sole of the foot, and securing the lower part of the limb in the hollow of a pillow, tied round it with a couple of pieces of bandage. The patient was immediately comfortable, and continued so. He passed a good night, and when I saw him next day was quite easy. On removing the dressing, after twenty-four hours, the toe was comparatively pale and shrunken, and could be handled comfortably. I reapplied the same dressing, but with firmer pressure. Forty-eight hours later improvement continued without interruption. I found the toe still further reduced, and as the sore, though cleaner, was not yet quite clean, I brushed over it, and into the crevices at its root and sides, with a fine camel-hair pencil dipped in the following lotion:—Borax, half a drachm; compound tincture of lavender, a drachm and a half; glycerine, an ounce and a half; water, six ounces. This application did not cause the least pain; and when I had once more immobilized and compressed the foot, I was able to drop it from the height of a couple of feet on to the couch without the least discomfort.

Valuable as dry dressing is in all recent wounds, lotions similar to the foregoing in composition are of essential service, when rightly employed, in foul wounds and old ulcers. The term "detergent" of the old surgeons has lost none of its fitness, and the therapeutic agents which it designates have lost none of their practical usefulness.

In the case now under consideration the result was largely due to absolute rest. The value of rest no one questions; but what is needed is a more clear and precise understanding of the means to be adopted to carry it into effect. Rest, to be of real service in the multitude of surgical cases which are benefited by it, must be, as nearly as practicable, *absolute;* and the construction of immovable apparatus, suitable to the exigencies of particular cases, will be found to tax the ingenuity, and to demand the nicest combination of gentleness and strength. Pressure was another great factor in my patient's improvement. It was so partly, no doubt, as an aid to immobilization, in unifying the parts of the apparatus and fixing the ankle and the smaller joints of the foot. But it must always be borne in mind that, whereas comparatively slight pressure, if hard and circumscribed, is painful, uniform, smooth, elastic pressure, accurately applied, is most soothing. It acts by controlling the local circulation, preventing extravasation, promoting absorption of interstitial deposits, and lulling, to impotence for mischief, muscular spasm, that most potent cause of local and constitutional unrest.

A wrist joint, hot and swollen after a heavy fall on the hand; an ankle, after a slip and a twist, grown big, and mottled and tender as a boil; a woman's pendulous, hot, tender breast, breeding an abscess: the fleshy, jumping stump of an amputated thigh, are one and all relieved, as if by magic, under steady, uniform, elastic pressure.

The Cold Douche in Coma.

The following case was reported to the clinical Society of London, by Mr. Keetly:—

The patient was a groom, aged 30, who was thrown from his horse into a ditch, alighting on his head. There had been a short period of insensibility, but on admission to the hospital he was conscious and irritable. The accident had happened at 5 P.M., and at 6 the next day, having passed a quiet night, he was seized with a convulsive attack, confined to the left side. During the day he had several similar seizures, in which his eyes were strongly turned to the left; in the intervals he vomited occasionally. On the third day he remained in much the same condition; but on the fourth the right side was affected; and after the attack this side was found to be paralyzed. Toward evening he improved considerably; and on the following day it was noted that his face was heavy, his pupils contracted, and he resembled a patient suffering from opium poisoning; the temperature was 100°. On the sixth day the coma was increased; temperature 100°, pulse 120; the cold douche was applied to

the head for two hours and a half; the temperature was 99°, pulse 70; his face rather blue; he could answer questions, but had a fatuous expression, and his answers were often childish. After this time he steadily improved, and ultimately recovered. A fracture of the posterior fossa was diagnosed, extending to the base of the skull, the severity of the injury and the severity of the meningitis appearing to point to such a condition. The epileptic seizures at first appeared to point to an injury of the dura mater, over the seat of violence; and the later attacks on the opposite side to an extension of the inflammation to the meninges of the other hemisphere. There was no difficulty in regulating the time during which the application of the douche was beneficial. The blueness of the lips was only noticed after more than two hours of this course of treatment. It should be added that he had previously been treated by an ice-bag to the head, and the administration of aperients.

Treatment of Prolapsus Ani.

Dr. J. B. Gill writes to the *Lancet*, on the treatment of this trouble—

Why should ergotine, or, in fact, any poison, be employed, so long as cases of the kind prove perfectly amenable to more gentle treatment? Allow me to quote a case; it is one of a series, and typical.

J. W., aged fifty, a well-to-do tradesman, came under treatment in June, 1866, a victim of prolapsus ani. He had suffered from dyspepsia throughout life, and had when he visited me an ulcer, the result of eczema, on his right leg. I gave him strict injunctions as to diet, and directed that he should instruct a builder to make him a box stool, containing the wherewithal to pump a stream of water on to his perineum. He carried out my instructions, and within two months completely cured his prolapsus. The prolapsed portion of the rectum was about four inches in length. It had existed for several years.

Reviews and Book Notices.

NOTES ON CURRENT MEDICAL LITERATURE.

——In a paper on "What is the best Method for the Care of Poor and Vicious Children," the well known philanthropist, Mr. Charles L. Brace, recommends that they be placed in families in country places, rather than in large asylums or "Homes." He observes:—

"Our large congregated reformatories ought to feel that they are 'behind the age' in their plan, and sell their valuable 'plant,' and buy large, cheap farms, and put up 'pavilion' cottages; using the interest of their considerable capitals in providing teachers and overseers to take charge of their 'groups' or cottage families. They would not have so much to show to the public in bricks and mortar and machinery, but they would do far more good."

BOOK NOTICES.

Yellow Fever A Nautical Disease—Its Origin and Prevention. By John Gamgee. New York. D. Appleton & Co., 1879. pp. 207.

Mr. Gamgee is well known as an inventive man of science who has made long and important studies of the diseases of the lower animals and of chemistry and physics in the applied forms. In the volume before us he discusses the problem of the origin, spread and prophylaxis of yellow fever.

Its origin he believes to be in the holds of ships long sailing in the tropical latitudes of the Atlantic ocean. Putrefactive changes take place in their confined spaces; foul air and water and intense heat combine to develope a virus of intensely poisonous character, which may infect the less poisonous putrescent materials of seaport towns. He likens yellow fever to typhus, and calls it *nautical* typhus. It is, in his opinion, a disease confined strictly to the sea and parts immediately adjacent. It is not contagious, does not depend on "germs," and is not communicable except when the peculiar poison has the above mentioned facilities for self-propagation, the most indispensable one of which is *heat*. A moderate degree of cold, to a little below the freezing point, absolutely destroys the morbific agent.

This suggests the remedy. Let the hold, the wood work, the rigging, the cargo of an infected ship be all thoroughly frozen, so that the cold, dry air penetrates every part of it, and the yellow fever is utterly and permanently destroyed in that ship until a re-infection. Can this be done? Mr. Gamgee answers yes; he is ready to do it. He has designed a "refrigerating ship" which can be employed for this purpose; and he is anxious that our government should interest itself, and have one constructed, to test the matter practically.

Mr. Gamgee does not claim originality in this suggestion. Years ago it was made by Dr. Faget, of New Orleans, and the present author gives him his full meed of credit. It has never yet been fairly tested. The ships which sail from the West Indies to Boston in the winter maintain fires, so that they are not thoroughly refrigerated.

Without discussing the theoretical portions of Mr. Gamgee's work, his practical suggestion is plausible, and it ought to be put in practice. It will do good, even if it fails of the anticipated result. It has probabilities in its favor, and if it succeeds, the result will be of incalculable good.

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EDUCATION, AND THE STUDY OF MEDICINE.

Whatever Professor VIRCHOW says is worth reading and thinking about. And when, in accordance with appointment, he handled the general subject of medical education, at the last International Congress, at Amsterdam, he made, as usual, some admirable suggestions.

Much of his discourse was taken up with the relation which classical education bears to the strictly medical one. Is it worth while diligently to foster the study of Greek and Latin in those destined to become physicians? VIRCHOW acknowledges the striking lapse of classical knowledge in the last generation. When he was a student Latin was a common medium of instruction in the German universities. Now it would puzzle the present professors to speak it, and if they did, most of the students would not understand them. Very few, indeed, of his medical friends have ever read Hippocrates in the original Greek.

Yet, he insists, there are advantages to be derived from a classical course, which cannot be gainsaid. First, there is the external advantage of maintaining the profession at a higher social level. A classical education guarantees a certain amount of early culture and better associations, and for this reason counts something in an individual's status. Then there is the advantage of greater accuracy in the use of words. Without some knowledge of the dead languages, especially Latin, the student does not appreciate the positive meanings of words. VIRCHOW illustrates this by the word *tuberculosis*, used as far back as at the time of Hippocrates, but whose meaning is constantly altered by new and careless writers.

He acknowledges frankly that since the Latin is no longer used for medical writing or teaching, there is no direct necessity for the medical student to acquire it; but he distinctly claims for the classical tongues that they are the most effective means ever found to develop the young mind and to widen its intelligence. The much talked of *Realbildung*, the "objective method," or the "genetic method" of education, might, indeed, profitably come in for a share of the attention of educators, but they cannot supplant the study of languages.

The worst fault in modern education is the surprising inaptitude for *observation* which it seems to leave behind it. In his lectures VIRCHOW repeats ten times, perhaps, the same thing, and yet, after all, finds his students have not *seen* what he has shown them. More than any other deficiency, he would have that corrected. Let the young man learn to observe and to see. Let him learn early to use his senses, and accurately to express the sensations which he feels. These are the two *desiderata* in modern education.

With more especial reference to the medical instruction in Germany, VIRCHOW expressed his belief that it is too exclusively oral; books are too little used; the professor comes too much to the front. He wishes the student to read and study good manuals, to follow closer the written text, and not depend so much on the professional orator. Many parts of medical science are read much more profitably than they are heard, and

the professor should chiefly confine himself to matters of experience and observation.

The views here expressed by VIRCHOW are not dissimilar to those in an address on the same subject by Dr. AUGUST DUPRÉ, at the opening of the current course in the Westminster Hospital, London. He, too, finds that on the one hand a strictly classical preliminary education forces thought into a narrow compass, while on the other, a scientific or technical one exclusively dwarfs the powers of the intellect itself. He records the striking fact that in his earlier years the late eminent Baron Liebig expressed his conviction that a new national life would commence for Germany, and that future generations would, in consequence of their increased knowledge of natural science, be intellectually superior to past generations, brought up chiefly in the old classical schools.

Unfortunately, this bright vision has not been realized, and Germany is reverting more or less to the old style, convinced of its greater wisdom. Liebig himself confessed, in after years, that his earlier opinions had been erroneous. He stated that he frequently observed among his own students in chemistry, that although those coming from technical schools appeared at first, in all that related to natural science, as giants compared to those having received a chiefly classical education, yet that the latter, in most cases, not only soon made up their deficiencies in this respect, but in the end generally outstripped their technically educated rivals.

AIDS TO DIGESTION.

There seems to be quite a diversity of opinion as to the medicinal value of the various digestive ferments which have been from time to time presented to the profession. This was illustrated quite recently, at the German Association of Naturalists and Physicians, which assembled at Baden. Several articles were read on the subject. Trials with the different preparations found in trade showed that nearly all German preparations were inert, while the only English preparation which was tested gave satisfactory results. Professor KUSSMAUL, finding that pepsine was always present in the gastric juice, even in very inveterate cases of gastric catarrh, does not believe that the administration of pepsine can be of much use at any time, and doubts the improvement alleged to have been witnessed, on this purely theoretical ground.

Last August the same question was brought before the Parisian Academy of Medicine. Professor VULPIAN, Dean of the Faculty of Medicine, read a memoir by M. MOURRUT, on artificial digestion, embodying his researches on the value of the different digestive principles. M. MOURRUT finds that the action of diastase is considerably retarded by the addition of an acid, while that of pancreatine is entirely abolished. If, after two hours, the acid solution is neutralized, diastase rapidly regains its sugar-forming property, but this is not the case with pancreatine, which remains inactive with respect to starch, and most probably also to albumen. With regard to pepsine, which is extensively used in the form of wines and elixirs, M. MOURRUT assures the Academy that the quantity of alcohol in these preparations suffices to render them useless, and concludes that they should be proscribed in future by the prescriber. And the more so as many of the most renowned elixirs sold contain traces only of the ferment to which they are supposed to owe their virtue, the rest having been precipitated, no doubt, by the alcohol in the preparation.

On the other side, Dr. WILLIAM ROBERTS, of Manchester, succeeded in completely peptonizing milk with properly prepared pancreas extract, and has thus opened out quite a new line of treatment for gastric disturbances. Pancreatic digestion is evidently beginning to interest the therapeutists as well as the physiologists, and it may be placed in the position which Dr. HORACE DOBELL assigns it. It is well known that for years he has been urging its claims on the medical public, who, however, have given but partial attention to the long array of facts in its favor which he has cited. Possibly the time will come when this and other ferments can be used with an accurate appreciation of their relative physiological effects.

Notes and Comments.

Therapeutical Notes.

BISMUTH IN ULCERATED OS.

℞. Bismuthi subnitratis,
Glycerinæ, āā q.s. to make a thick cream.

Dr. Suesserott recommends gynecologists to use this in preference to other applications to ulcerations of the os and cervix uteri. He applies it through a glass tube, and retains it by a pledget of cotton.

CANTHARIDES IN GLEET.

℞. Pulv. cantharidum,	gr. ¼	
Olei terebinthinæ,	gtt. v.	M.

Sig.—For one pill, thrice daily, in obstinate gleet.

This is reported as very efficient in old and refractory cases, by a writer in the *Southern Clinic*, October. Should strangury be brought on, discontinue for a day or so.

IODOFORM IN FISSURED NIPPLES.

Dr. M. O'Hara, of the Obstetrical Society of Philadelphia, has found the following application to fissured nipples very satisfactory, and giving prompt relief to pain:—

℞. Iodoformi,	℥ ss	
Collodion,	℥ j.	M.

Sig.—Paint on the part from time to time.

ECZEMA INTERTRIGO OF INFANTS.

℞. Plumbi acetatis,	gr. xxx	
Acidi acetici diluti,	℥ ij	
Glycerinæ,	℥ iss	
Aquam rosæ, ad	℥ viij.	M.

Wash the sore parts well with soap and water, dry carefully, then apply the above.

Dr. H. B. Hodges writes to the *British Medical Journal*, that in hundreds of cases, during a quarter of a century of practice, he never knew the above to fail to cure the disease. He uses no internal medication.

REMOVAL OF THE SMELL OF MUSK.

This, which is so abiding, and to some so disagreeable, may be removed from the hands or utensils by applying a paste formed of pulverized ergot. This property of smut-rye was accidentally discovered by Blitz when preparing a compound of the above ingredients.

The Expression of Grief.

This has recently been a subject of investigation by the eminent Italian physiologist, M. Paolo Mantegazza, who has studied with great care all the contractions which suffering produces in the human face, and endeavored to arrive at an exact distinction of the phenomena of real from those of simulated sorrow. All the forms of dolorous hypocrisy he exposes mercilessly. The following, according to M. Mantegazza, are signs of feigned grief:—1. The expression is nearly always exaggerated relatively to the cause of the grief; 2. The visage is not pale, and the muscular disturbance is intermittent; 3. The skin has its normal heat; 4. There is not harmony in the mimicry of grief, and one sees certain contractions, certain relaxations which are wholly wanting in real grief; 5. The pulse is frequent, in consequence of the exaggerated muscular movement; 6. A surprise, or any object which vividly attracts the attention, suffices to make the tragic mask immediately fall off; 7. Sometimes one succeeds in discovering among the tears, the sobs, and the most heart-rending lamentations, the presence of a chuckle, which expresses, perhaps, the malignant pleasure of practicing a deception; 8. The expression is very eccentric, or is wholly wanting in concentric forms.

Dangers from the Use of Pilocarpine.

Besides its alleged ecbolic properties, Dr. Jenkins, of New York, has called attention to another objection to the hypodermic injection of pilocarpine in any case, and that is the flooding of the lungs by an excessive bronchial secretion.

Dr. T. G. Thomas thinks the objection worthy of serious consideration. He had seen a case of uræmia toward the end of the eighth month of pregnancy, where labor was brought on and the child delivered alive, the mother suffering greatly after the birth of the child and becoming comatose. Jaborandi was tried by the rectum, and resulted in a profuse bronchorrhœa, which was at first attributed to an alteration in the circulation. The fluid was excessive, and the noise produced in respiration resembled the so-called "death rattle."

Influence of Medicinal Agents on the Fœtus.

Dr. Kubassow recently reported to the St. Petersburg Medical Society the results of some experiments which he had performed. In three instances a drachm of chloroform, and in six from a scruple to half a drachm of chloral hydrate, was administered as an enema to the woman in labor, sometimes in a single dose, and at others in several times. They were as follows: 1. Both substances given in medium doses exert a decided effect on the fœtus. 2. Both appear to act in a similar manner. 3. At first a stimulant effect is produced, as shown in the more active movements of the child, and in the increase in force and rapidity of the action of the heart. Later this action becomes less forcible

and slower, and the movements of the child are exerted less readily. 4. The effect is induced rapidly, viz.: in five, or at latest, ten minutes. 5. Chloral acts more rapidly and forcibly than chloroform, even when chloroform narcosis is produced. 6. Chloroform can always be detected in the blood of the funis. 7. After injection of chloral a slight excitement is also produced in the mother, which is followed in two or three hours by a diminution of temperature.

Real and Hysterical Tetanus.

Sometimes it is difficult to distinguish between these conditions. In a case reported in the *American Journal of Medical Science*, of the latter condition, Dr. D. Webster Prentiss states that the points in the case marking it as hysterical were—

1. It was ushered in by noise in the ears, deafness and blindness.

In true tetanus and strychnia poisoning the senses are rendered preternaturally acute.

2. There was unconsciousness during the paroxysms.

This never occurs in tetanus and strychnia poisoning, except as an ante-mortem condition.

3. The eyes were closed during the spasms. The eyes stare widely open in the other diseases.

4. The long uninterrupted sleep at night. In this particular there is a resemblance to chorea. In true tetanus there is no such relief until convalescence. It is noticeable also that no relief followed the administration of chloral until it was given in thirty-grain doses.

Paths of Conduction of the Spinal Cord.

From a number of experiments on rabbits, reported in the *American Journal of Medical Science*, Drs. Ott and Smith draw the following conclusions:—

1. That the motor and sensory fibres in the cervical segment of the spinal cord run exclusively in the lateral columns.

2. That the nerves administering to respiration, vasomotor nerves, and cilio-spinal nerves, also run in the lateral columns.

3. That the posterior columns are concerned in coördination.

4. That irritation of the cervical cord causes coördinated jumping movements.

5. That no sensory fibres pass to the brain in the posterior columns.

These observations merit the attention of physiologists, as they define, strikingly, the paths of conduction.

CORRESPONDENCE.

The Story of Public Health Legislation.

ED. MED. AND SURG. REPORTER:—

In the *American Journal of the Medical Sciences*, for October, 1879, is what purports to be a review of "National Public Health Legislation," prepared by one of the members of the National Board of Health, the object of which is to "give an account" of a "marked change" on the part of Congress in its treatment of the subject of public health. As the reviewer practically omits to "review" any legislation except that which refers to the organization of the Board of which he is a member, and as any such review is incomplete unless the *causes* which led to the enactment of the present law are considered, I propose to supply these omissions, briefly, and to give credit for the "marked change" where it justly belongs:

At the invitation of the Philadelphia Board of Health, "the first American Congress ever convened for Sanitary Reform" met in Philadelphia, May 13th, 1857, and continued in session three days. The call for the Convention was in pursuance of the following resolution of the Philadelphia Board of Health, passed October 29th, 1856:—

Resolved*, That a committee of three, with the President, be appointed to correspond with the Boards of Health of New York, Boston, Baltimore and New Orleans, on the propriety of calling a Convention of delegates from the various Boards of Health in the maritime cities of the United States, for the purpose of a conference in relation to the establishment of a uniform system of revised quarantine laws.

There were present at this Convention: from Boston, thirteen delegates, including the Mayor and eight aldermen; New York, four delegates from the Board of Health; Providence, two delegates; Newark, two delegates; Camden, six delegates; Philadelphia, five delegates from the Board of Health; four from the Board of Trade; five from the College of Physicians; and six from the County Medical Society; Wilmington, Del., nine delegates; Baltimore, ten delegates; Norfolk, two delegates; New Orleans, five from the Board of Health, and two from the Common Council. Dr. Jewell, of Philadelphia, was elected President; Mayor Rice, of Boston, and Dr. Barton, of New Orleans, were elected Vice Presidents; Dr. Edward Hartshorne, of Philadelphia, and Homer Franklin, Esq., made Secretaries. Among the delegates were such well known names as Otis Rich, Henry G. Clark, Geo. Hayward, Jacob Bigelow, Usher Parsons, Edwin M. Snow, D. F. Condie, Henry F. Askew and R. LaRoche.

A convention so constituted could not but command the respect of the country, and even after the lapse of over twenty years its proceedings may be re-read with interest and profit.

* The several State quarantine and health laws then in force are too voluminous to insert here; it is perhaps enough to say that Pennsylvania had a very complete quarantine law for Philadelphia, as early as 1700; the New England States earlier; and that the Boston quarantine was reorganized on very nearly its present basis in 1827; while Congress passed a law, which was approved February 25th, 1799, entitled, "An act respecting quarantines and health laws."

This Convention adopted 23 propositions; of these the first 18 relate to the general principles and details of quarantine management; propositions 19 and 20 read as follows:—

"19. With a view to procure a uniformity in quarantine regulations throughout the several ports of the United States, the assembling of another, and probably several, conventions similar to the present one will be required.

20. To provide for the assembling of such a convention in 1858, it is suggested that the President, Vice Presidents and Secretaries of this Convention, with a committee of one member from each State represented in the Convention, be continued after our adjournment, as commissioners for the purpose of taking the necessary steps for the call of a convention next year; *Provided, however*, that their powers shall cease immediately upon the assembling and organization of the Convention of 1858."

The second National Quarantine and Sanitary Convention was held in Baltimore, April 29th, 30th and 31st, 1858; the third Convention in New York, April 27th, 28th, 29th and 30th, 1859, and the fourth in Boston, in 1860. Space will not permit me to give in detail the proceedings of these conventions, but their bearing on subsequent national legislation is so important that I quote from the proceedings of the New York Convention: "A committee, consisting of Drs. J. W. Francis, F. E. Mather and John Hutchinson, was appointed to consider and report upon the plan of W. A. Royce, for 'compressing and refrigerating the atmosphere, preliminary to its use to disinfect vessels,'" etc. A. H. Stevens, M.D., of New York, submitted the following:—

"*Resolved*, That in the absence of any evidence establishing the conclusion that yellow fever has been conveyed by one person to another, it is the opinion of this Convention that personal quarantine of cases of yellow fever may be safely abolished."

This resolution received eighty-five votes, and only six were cast in the negative; an amendment was adopted, on motion of Dr. A. N. Bell, as follows:—

"*Provided*, That *fomites* of every kind be rigidly restricted."

Several of the maritime cities took action on this report, and the New York Chamber of Commerce having appointed a select committee to consider the subject, adopted seven resolutions, six having reference to the local quarantine, and the last recommending the "establishment by Congress of a system of warehousing in connection with the quarantine station at the port of New York." At this Convention a committee, consisting of Drs. John W. Sterling, Alex. H. Stevens and John McNulty, reported in favor of quarantine hospitals being controlled and operated by the general government, as follows:—

* * * * "As there are, in our opinion, cogent reasons why the United States should possess the control and charge, as well as the appointments, of a quarantine establishment, we will notice the grounds on which this latter part of the resolution was based: 'In the first place, we consider that a quarantine, from its close connection with the U. S. Revenue Department, and the important bearing which it has on commerce (which Congress alone can regulate), and upon travelers soon to be dispersed throughout the Union, useless, unless it be organized almost exclusively as a national institution." The committee then quote the Act of February 25th, 1799, relative to warehousing, giving at some length the details of examination of baggage by revenue officers, and give it as their opinion that "the health officers should not be subject to the control of the Municipal Boards of Health." Although not concurred in by the Chamber of Commerce of New York, it may be fairly said to have originated the idea of national control of external hygienic measures. It was further expanded at the Boston Convention, in 1860, where a committee, composed of Drs. Elisha Harris. A. N. Bell, and Wilson Jewell, offered the following resolutions:—

"*Resolved*, That this report (on external hygiene) be referred back to the committee, with directions to negotiate with our national government, or Department of State, to secure, by convention or otherwise, the national and international adoption of this code.

"*Resolved*, That a committee of one from each State represented in this Convention be designated by the delegates of the several States, and appointed by the Chairman of the Convention, with power to confer with the governments of their respective States, for the adoption of this code.

"*Resolved*. That the local sanitary authorities of the several States, and the municipalities in the United States, be furnished with a copy of this report, and that they are hereby respectfully requested to carry into effect all its *specific recommendations*, and the general provisions of the code, without waiting for their general and international adoption."

The "code" alluded to was the "specific measures of quarantine," recommended by the committee. But the subject of quarantine was not all that the Convention had now taken up; Dr. E. M. Snow, of Providence, was appointed a special committee on "a complete and efficient system of registration of births, marriages and deaths, with particular reference to cities, and the necessary connection of the same with sanitary measures." This "code" was freely circulated among sanitarians and municipal authorities, and is to-day the basis upon which the present quarantine regulations of the country are founded.

The breaking out of the civil war turned the attention of sanitarians into another channel, and we find the same men working shoulder to shoulder in the "Sanitary Commission" of that period. Later, when the American Public Health Association was organized, we find many of the same names prominent in the same line of work. The avowed object of this Association was the "advancement of sanitary science and the promotion of organizations and measures for the practical application of public hygiene," and in the opening address of its President (Dr. Stephen Smith, of New York) he said, "*The general government should, within its appropriate sphere, coöperate with State governments.*" "It must be apparent to every one at all conversant with sanitary science and sanitary administration, that the general government has an important duty yet to perform in providing for the general welfare; it must organize on a proper basis a Department devoted to the collection of information in regard to diseases peculiar to localities and their local causes, of the progress, course and prevalence of contagious diseases and epidemics at home and abroad, and the diffusion of such information among health authorities in all parts of the country and among the people at large."

But the idea of national supervision of purely professional matters has always met opposition.

At the same meeting Dr. Vanderpoel, of New York, said a "uniform system of quarantine laws on the Atlantic and Gulf coasts is the first requirement, but by the term 'uniform' he did not mean a system to be inaugurated by the United States Government, but the several States, the same code to be enforced at every station in each jurisdiction, and adopted by each State."

March 11th, 1873, a resolution of the Senate directed the Secretary of the Treasury "to inform the Senate at its next session how many superficial feet of clear space are allotted to each steerage immigrant on board ship, according to official reports of the collectors of customs; also to cause the atmosphere of some of the steerage compartments to be chemically analyzed by a competent expert, with a view of ascertaining its healthfulness; and also to have an examination made of the general treatment of immigrants on board ship, and to suggest such alterations in existing laws as may be necessary to secure effectual protection to steerage passengers."

A commission composed of John M. Woodworth, Supervising Surgeon United States Marine Hospital Service, Dr. B. F. Craig, Mr. J. Fred. Myers, Miss Helen M. Barnard, Mr. C. Colne and Thos. B. Sanders, Esq., reported to the Secretary of the Treasury, upon the above, and the report was transmitted by him to Congress, January 21st, 1874. That body had already passed a law (March 3d, 1855) relative to space for passengers in vessels arriving from foreign ports, provided a penalty for carrying too many passengers, made provision for lockers and hospitals, and regulated the size of the spaces between berths; but upon receipt of the report of this Commission, a law was passed, approved February 27th, 1877, providing for the inspection of passenger vessels by an inspector of customs, who is directed to make a report in writing to the collector of customs whether the requirements of the law are complied with.

September 8th, 1874, the Secretary of the Treasury published a circular (Department No. 90,) defining the "duties of United States officers with reference to quarantine and the public health," basing the same upon section 4792 of the Revised Statutes of the United States, and upon articles 294 and 295 of the General Regulations of the customs and navigation laws of the United States, 1874. Under the same date the Secretary of War issued a general order (No. 109) calling the attention of officers commanding forts and posts upon the sea coast to certain provisions of the same law. Following the above (September 9th, 1874), the late Surgeon General Woodworth issued a circular addressed to the local health authorities and leading sanitarians throughout the country, soliciting such information as would "conduce to the greatest efficiency and harmony of action between State and municipal health authorities on the one hand, and the officers of the national government on the other." During the same year Congress ordered an investigation into the cholera epidemic which had visited our shores. From this time on the subject of public health and national supervision of quarantine received much attention from sanitarians and others, as can be seen by reference to the medical journals and the secular press of the period. The assembling of the International Medical Congress of 1876 gave it further impetus, and the year following a convention of business men and physicians of the Gulf coast and Southern seaboard was called. The Convention met in Jacksonville, Fla., February 14th, 1878, and was composed of 32 delegates; a resolution was adopted to the effect that a *uniform system of quarantine was absolutely required*, and that the *system could only be enforced by the National government*. Based upon the action of this Convention a bill was presented by Hon. Julian Hartridge, of Georgia, in the House, and simultaneously in the Senate, by Hon. Jno. B. Gorden, which bill was passed, and became a law on the 13th of April, 1878.

Lack of space will permit me to give only a brief synopsis of this law: The first section prohibits the entry of any vessel or vehicle (or the conveying of any infected person or persons, or merchandise, or animals) from any foreign port or country where any contagious or infectious diseases exist, into any port of the United States, contrary to the quarantine laws of any State. The second section makes it the duty of the consular officer or other representative of the United States to give information to the Surgeon General of the Marine Hospital Service* of the date of departure and port of destination of any such vessel, and also make the same report to the health officer of the port of destination; they shall also make weekly reports of the sanitary condition of their respective ports; the Surgeon General is charged with the execution of the provisions of this Act (under direction of the Secretary of the Treasury), and shall frame all needful rules and regulations for that purpose, the same to be subject to the approval of the President, but not to conflict with any sanitary or quarantine law or regulation of any State or municipality. The third section makes it the duty of the medical officers of the Marine Hospital Service, and of custom house officers, to aid in enforcing the national quarantine rules and regulations. Section four makes it the duty of the Surgeon General to notify State and municipal and United States officers of threatened ports of destination of such vessels, and requires him to make weekly abstracts of consular sanitary reports and other pertinent information, and transmit the same to health authorities, etc. Section five clothes officers or agents of State or municipal quarantine systems with power to act under this law upon application of such State or municipality; at ports having no quarantine, officers of the Marine Hospital Service are required to perform this duty. Section six repeals all acts, or parts of acts, inconsistent with this Act.

Under the provisions of this act a weekly "Bulletin of the Public Health" was published for nearly a year by the Treasury Department—34 numbers by Surgeon General Woodworth, and 12 by his successor, Surgeon General Hamilton; its publication was transferred, by the act of June 2d. 1879, to the National Board of Health.

The yellow fever epidemic of 1878, the organization of a commission to investigate it (organ-

* This Service, like all Bureaus relating to commerce, is under the Treasury Department.

ized by Dr. J. M. Woodworth and aided by Mrs. Elizabeth Thompson and by the contributions of the whole country), the virtual approval of this effort by Congress, which immediately upon assembling appointed a special committee on Epidemic Diseases, and sent out another commission with experts to make further investigation; the report of that and the former commission, are matters of history which, taken with the law of April 1878, and the action of conventions and sanitarians previously, will doubtless "account" in some measure for the "marked change which has occurred in the situation" of public health matters, and show to whom credit is due for the pioneer work in the direction of public health legislation in the United States. *

News and Miscellany.

The National Board of Health.

We have given in this number, from what will be recognized as a very competent hand, the real history of the origin and development of the National Board of Health. This is a noteworthy contribution, not only because of the momentous character of the national movement it refers to, but further, and just now, because the history of the movement has been recently so inaccurately laid before the profession in one of the prominent medical journals.

Items.

—The Insane Asylum on Blackwell's Island, New York, has been again brought before the public on the charge of cruelty by officers toward the inmates.

—Smallpox is at present hardly known in England. In the month of October there was one week in which not a single case was reported in the 19 largest cities of that country. Almost equal immunity exists in the United States.

—Some time ago we called attention to the disparity which exists in Montreal between Protestants and Catholics in reference to deaths from diphtheria (cur. vol. p. 198). In a late issue the *British Medical Journal* points out the greater prevalence of the disease among Dissenters, compared with members of the Established Church. The subject is a curious one and merits further investigation.

OBITUARY NOTICES.

Prof. James Aitken Meigs, M.D.

This distinguished physiologist, Professor of the Institutes of Medicine and Medical Jurisprudence at Jefferson Medical College, in this city, died November 9th, after a short illness, in the 50th year of his age. The attack commenced with a series of chills, followed by fever, a few days before his death. It was recognized as malarial septicæmia, and he was apparently improving, when he was carried off very suddenly, by embolism.

Dr. Meigs was born in this city, July 31st, 1829. He matriculated in Jefferson Medical College in October of the year 1848, and in March, 1851, graduated with high honors, receiving the certificate annually conferred by the corps of lecturers of the Philadelphia Association for Medical Instruction on those students who passed successfully the examinations upon the lectures delivered by the Association. He then began practice in this city, where he since pursued it until his death. For several years he acted as assistant to the Professor of Physiology in the Pennsylvania College, and engaged in the examination and preparation of students for graduation. In September, 1854, he was appointed Professor of Climatology and Physiology at the Franklin Institute, holding the position for eight years. He was subsequently Librarian of the Academy of Natural Sciences, President of the Philadelphia County Medical Society, and member of many learned societies. As a writer he was eminent in the departments of anthropology and craniology, as well as of physiology proper, and in his earlier years wrote frequently for the medical and scientific periodical press.

His lectures were remarkable for the interesting and pleasing manner in which he conveyed his ideas to his audiences, and were at all times notable for the absence of that dryness which renders lectures of a scientific character distasteful to the average listener. His memory was very retentive, his lectures being always delivered without the aid of notes, and being generally illustrated by plates, etc.

He was unmarried, and leaves no relatives except his aged father.

—Dr. Frank Geisler, of Hoboken, who was found in his office on Monday night, the 3d inst., suffering from the effects of morphine, died later in the night. Dr. Geisler was at one time a surgeon on one of the Bremen steamers.

MARRIAGES.

BRUBAKER—SEEBOLD.—At Hartleton, Pa., by Rev. P. C. Weidemeyer, John Brubaker, of Kansas, son of Dr. Brubaker, of Mifflinburg, Pa., and Jeannette V., youngest daughter of Dr. W. F. Seebold, of Hartleton.

FORBES—BROWNE.—In Brooklyn, L. I., on Thursday, October 23d, by the Rev. S. S. Seward, J. Harrison Forbes, M.D., and Mrs. Sybella Browne, daughter of the late Thomas Thompson.

HULSHIZER—REIGEL.—On the 15th ult., at the home of the bride's parents, by Rev. R. Leighton Gerhart, Dr. Allen H. Hulshizer, of Philadelphia, and Miss Ida Y. Reigel, daughter of Isaac Y. Reigel, of Reigelsville, New Jersey.

ORWIG—SMITH.—On the 21st ult., at the residence of the bride's parents, by the Rev. S. L. Wiest, Dr. Geo. A. Orwig, of Cleveland, Ohio, and Miss Delia F. Smith, of Philadelphia, daughter of Sidney Smith, Esq.

DEATHS.

BOISNOT.—In this city, on the 30th of October, James M. Boisnot, M.D., aged 43 years.

FISH.—On November 4th, at East Pau Pau, Ill., of diphtheria, Eddie, only child of the late S. N. Fish, M.D., a boy of unusual promise, and the pride of his widowed mother.

HILL.—In Sutton, Vt., on Oct. 16th, Dr. S. Hill, aged 88 years.

RODENSTEIN.—At Washington Heights, N. Y., Friday, October 31st, Nellie, only daughter of Dr. L. A. and Sarah Tieman Rodenstein, aged 13 years and 11 months.